

Construction Management Plan

for
Proposed Hospital

35 Water St
Wahroonga, NSW

1.0 INTRODUCTION

This Construction Management Plan (CMP) has been prepared for the proponent Waterbrook at Wahroonga Pty Ltd to accompany an Environmental Assessment (EA) Report for a Part 3A application to the Department of Planning (Project Application MP07_0151) relating to a proposed private hospital on a site on 35 Water St, Wahroonga.

This CMP has been prepared to address the impact of the demolition/ detailed excavation and construction works associated with the proposed development of a Hospital on the surrounding environment and community. The CMP will outline procedures that are intended to be implemented to manage construction activities ensuring that unacceptable high levels of environmental or community disturbance do not occur throughout the duration of the works.

The development site comprises of rectangular Lot comprising of 35 Water St in Wahroonga. The site is 21,300sqm in size and is bounded by Water Street to the North, Young St to the East and private residential dwellings to the West and South.

The proponent proposes to appoint a third party construction contractor (referred to as "the contractor" elsewhere in this document) to deliver this project. The contractor will be responsible for implementing the principles of this CMP. Further refinement of the CMP for this development is likely to occur once the contractor has been appointed.

1.1 OBJECTIVES

The objectives of the CMP are to:

- Provide a methodology within which the demolition, detailed excavation and construction activities may be completed in a manner which will not cause environmental or community disturbances above agreed levels, with particular attention to protection of heritage elements and the Blue Gum High Forest (BGHF) Critically Endangered Community on the site.
- Provide a framework for procedures to be adopted when undertaking the construction activities.
- Implementation of statutory requirements in respect to consideration of environmental issues associated with the construction of the work.

1.2 REFERENCES

On 3 December 2008 the Department of Planning issued Director General Requirements (DGR's) for the Part 3A Application in accordance with Section 75(f) of the EP and A Act. In a supporting document to the DGR's was a letter from the Department of Environment and Climatic Change dated 10 January 2008.

These two documents reference amongst other things the following requirement to be included in an EA relating to construction activities:-

- Impacts upon or created by contamination, geotechnical issues, ground water, noise and vibration, storm-water and surface water, air quality, waste management and air pollution.
- Proposed means to manage construction traffic and parking.
- Details of any cut and fill proposed and whether it is to be imported/exported from the site.
- A statement of commitments detailing measures for environmental management and mitigation measures and monitoring for the project.
- Community consultation implementation plan covering the construction period, including notification process for the project, complaints handling system and dealing with construction-related issues.
- Retention and protection measures during construction of the Blue Gum High Forest.

Other references include:-

- Local Council regulations (Ku-ring-gai Municipal Council)
- Urban Erosion and Sediment Control 1992 (CALM)
- Relevant Australian Standards
- Environment Protection Legislation
- Clean Waters Act 1970
- Clean Air Act 1961
- Waste Minimisation Act 1995 (NSW)

2.0 THE PROPOSED CONSTRUCTION WORKS

The proposal consists of provision of 129 rooms/beds with associated hospital facilities spread over 2 interconnected buildings with 1 to 2 levels of basement car-parking. The former Rippon Grange homestead and heritage landscape elements are to be refurbished.

Demolition includes the removal from site of a timber cottage, a school room to Water St removal of a 1970's extension of the Rippon Grange homestead and the removal of trees approved to be removed.

Excavation is required to form the carpark basements which will be excavated and constructed in such a way to minimize the impact on adjoining heritage elements, retained trees and Blue Gum High Forest Community. The 4 to 5 level superstructure to the hospital wings will be formed in a load-bearing reinforced concrete blade column and reinforced concrete slab.

3.0 GENERAL CONSTRUCTION MANAGEMENT

3.1 CONSTRUCTION HOURS

The intended hours of construction activities are:

Monday to Friday	7am to 6pm
Saturday	8am to 1pm
Sundays and public holidays	No work

These hours are in line with the hours as specified by DECC's in their recommended Environment Assessment (EA) requirements – see Attachment 1. Noise management methodology, during these working hours is addressed in section 5.4 of this CMP.

3.2 COMMUNITY CONSULTATION

Leading up to the commencement of construction activities a start up meeting in which the proponent's contractor is introduced to community representatives will be held. The start up meeting will allow community representatives that may be impacted by construction activities to obtain:-

- An introduction to the proponent and contractor's key personnel during the construction activities.
- Contractor contact details during site working hours and out of site working hours.
- Communication channels including phone, mobile, fax or email for complaint handling of issues such as noise, air quality, disruption of services, traffic management, hours of works, safety, security, containment of site activities and the like.
- Communication channel for escalation of any grievances via the proponent's consulting project manager or principal certifying authority.

- Agreeing means of communication for the contractor to advise the community of progress and up and coming events (generally in the form of a newsletter) that will impact on activities in and around the site.
- Describing in more detail the construction methodology and mitigating measures used to control construction noise, vibration and traffic.
- An opportunity for the contractor to hear in more detail potential concerns of the community relating to construction activities, and for the contractor to communicate mitigating measures to address the relevant concerns.

Other key stakeholders for the contractor to consult generally prior to commencement of construction are:-

- Department of Environment and Climatic Change
- NSW Heritage Council
- Work Cover Authority
- Ku-ring-gai Municipal Council – various departments
- RTA
- Sydney Water
- Energy Australia

3.3 CONTACT DETAILS DURING CONSTRUCTION

The contractor will appoint a Project Manager for the overall construction management of the project and the coordination of all trades with the site forepersons for all site construction-related activities.

Their contact details will be distributed to the community at the start up meeting and via newsletters. Emergency contact details will also be distributed and posted on signage to the site entrance,

3.4 SITE ACCESS AND ACCOMMODATION

Site access will only be permitted to contractors and site staff. Members of the public are not allowed onsite without an invitation from the Project Manager.

The contractor will maintain chain mesh wire fences around the site boundary. Access gates will be locked between non-working hours.

The site accommodation will be temporarily positioned as per the attached construction management plan and repositioned in various locations as the project advances. These will be relocated into the carpark at a later stage during construction if required.

3.5 ON SITE MATERIAL HANDLING AND STORAGE

The site will be serviced by a mobile crane initially, and then a tower crane with lights and signage will be erected to service the materials handling requirements.

Forklifts will be used when required for the loading and unloading of most of the materials from trucks. Movement of material around the site will be by all-terrain Manitou and/or forklift which will assist the hoists and crane.

There will be restricted routes that can be navigated by onsite vehicles, so to keep vehicles outside the designated BGHF areas and tree protection zones.

There shall be several man and material hoists erected in various locations to vertically service the proposed buildings. These will be used to transport men and materials up the building.

No materials will be stored outside the site boundaries. Materials will only be stored within designated areas on site, away from retained trees & the BGHF area.

Any hazardous materials will be stored in accordance with legislative work cover practices and codes.

4.0 PEDESTRIAN AND TRAFFIC METHODOLOGY DURING CONSTRUCTION WORKS

4.1 TRAFFIC MANAGEMENT

Traffic management during the construction phase will be as described in the Assessment of Traffic and Parking Implications prepared by Traffix and shall also include the below:-

- No deliveries on to the site will be allowed outside working hours
- All offloading and loading of vehicles will be done within the site boundaries.
- Vehicles requiring loading and unloading will be serviced via the site entrance, located on Young St.
- Trucks will exit the site in a forward facing direction.

- Site access and adequate visibility for both pedestrians and vehicles will be maintained at all times while traffic enters and exits the site.
- Vehicle deliveries will be managed at all times by a Traffic Controller to ensure that the public are safe at all times and minimise the impact of the construction vehicles on local traffic management and flow.
- Measures will be adopted to manage the increase in local traffic, with a view to minimising traffic conflict and impact on the local community, in particular during peak times and school drop off and pick up times.
- Restricted site access from the site entrance on Water St will be used for smaller truck and vehicle deliveries and couriers.

4.2 PEDESTRIAN TRAFFIC

Pedestrian traffic via along Water St and Young St will be maintained during construction. Construction vehicle crossover over points will be signposted and appropriately manned during site traffic ingresses and egresses.

5.0 SITE CONTAINMENT

5.1 SEDIMENT CONTROL

The sediment control plan is to be incorporated onto the site, showing the various control measures that will be introduced to control sediment and construction waste from being washed off site, through the storm water system or water course or into the sensitive BGHF areas. The plan is to meet all statutory requirements and be installed as per the sediment control plan prepared by LHO Group Pty Ltd and as covered in the Construction Management Plan. The contractor is to adhere to the plan.

5.2 DUST AND DEBRIS CONTROL

Geo-mesh/ shade cloth fabric is to be installed to the site boundary fence. The fabric is to be installed full height over the fence, and maintained regularly.

The area of the site under construction or used for construction activities will be cleaned on a regular basis to reduce the level of dust. Hard surfaces will be wet down regularly.

All vehicles tyres are to be washed down or cleaned by means of a shaker at the site exits to remove any mud and dust. Any dust or debris from truck tyres accidentally falling outside the site will be cleaned up on a regular basis prior to it entering the storm water system.

Removal of any hazardous materials during any demolition activities will be carried out in accordance with the latest NSW OH&S Guidelines.

5.3 WASH OUT AREA

The construction contractor is to have a designated wash out area for the concrete delivery vehicles. This wash out area is to be fully contained and cleaned out on a regular basis.

5.4 NOISE AND VIBRATION

- No works are to commence prior to the agreed hours of work.
- All noisy works are to be within the agreed work hours. The site will comply with the noise requirements of the DECC at all times.
- Refer to acoustic report prepared by Vipac Engineers for further noise mitigating management measures required during the construction period.
- Refer to Geotechnical report prepared by Douglas & Partners for noise and vibration mitigating measures to be implemented during excavation activities.
- Maintain exhaust silencing attachments on all diesel powered equipment.
- Only silenced compressors and silenced, bagged jackhammers (if required) will be permitted to be used on site.
- Potential for noise generation to be used is an important criteria in the selection of construction plant and equipment on the site.
- On site periodic checks are to be carried out to ensure that noise suppression devices are installed on all required plant and equipment.
- Where practicable, noise-generated plant is to be located away from residential boundaries.
- The Site Manager will ensure that all employees and sub-contractors are advised of the procedures under the 'Noise Management Methodology' during each Site Specific Safety Induction prior to commencement of work on the site.

5.5 AIR QUALITY MANAGEMENT METHODOLOGY DURING CONSTRUCTION

The contractor will establish air quality management systems and procedures to be implemented during construction activities, including but not limited to:-

- All construction plant, equipment and vehicles are to be properly maintained and operated so as to alleviate excessive exhaust emissions.
- Waste loads leaving the site are to be covered at all times.
- All dust generating construction activities are to cease during high wind conditions unless such operations can be controlled by localized watering or other control means.
- Where practical site cleaning earthworks are to be staged so the exposed area and wind generation of wind-blown dust is minimised.
- Where practical, earthworks, roads, stockpiles and other surfaces as necessary are to be sprayed with water or other suitable liquids and the dust suppression equipment to be provided.
- The burning of waste materials and the lighting of fires will be strictly prohibited on the site at all times.
- Continual visual monitoring of the site will be undertaken by site management to ensure that works do not generate unacceptably high levels of dust.
- Wherever practical, materials and processes that are non-toxic will be employed to minimize possible harmful affects to air quality.
- Wherever practical any ozone depleting gases in building services installations will be removed prior to deconstruction works.

6.0 GROUND CONDITIONS

6.1 SITE CONTAMINATION

A preliminary assessment report has been carried out by Thornton Consulting as to in-ground site contamination. All spoil and material removed from the site shall be transported as per DECC and Work Cover requirements and shall be tipped at appropriately licensed landfill sites.

The contractor shall ensure any new or imported fill or soil shall be clean fill.

6.2 EXCAVATION ACTIVITIES

The carpark basement requires excavation under the main building and the eastern wing. All excavation activities shall be carried out in accordance with the requirements of the geotechnical report compiled by Douglas and Partners. Where excavation activities adjoin the BGHF area excavation activities shall also be carried out in accordance with the requirements of the hydrogeological report

compiled by DF Dickson & Associates. The geotechnical report highlights a mixture of clay and low strength shale within the excavation area. It is anticipated for there to be approximately 15,600 cubic metres of excavated material removed from the site.

Where possible existing topsoil will be stockpiled and reused in the final landscape plan. All stockpiling will be appropriately bundled and protected to mitigate sediment run-off in wet conditions or air borne dust in dry conditions. No stockpiling is to occur in the BGHF area.

6.3 PROTECTION OF PRIVATE AND PUBLIC PROPERTY

The stability of adjacent properties during excavation and construction will be maintained and monitored as per the design of a qualified structural engineer.

Dilapidation reports of the neighbouring properties and public land will be undertaken.

6.4 PROTECTION OF RETAINED TREES AND BLUE GUM HIGH FOREST COMMUNITY

All care will be taken to protect the existing Blue Gum mapped area and the retained trees on the site. Tree protection shall be in strictly in accordance with the requirements set out in the Arboricultural Impact Statement (AIS) prepared by Tree Wise Men and the Vegetation Management Plan (VMP) prepared by UBM Ecological Consultants Pty Ltd.

The construction zone around the East wing building within any Blue Gum mapped area is to be kept to an absolute minimum. All care to be taken to limit damage to trees and the under storey of the Blue Gum area.

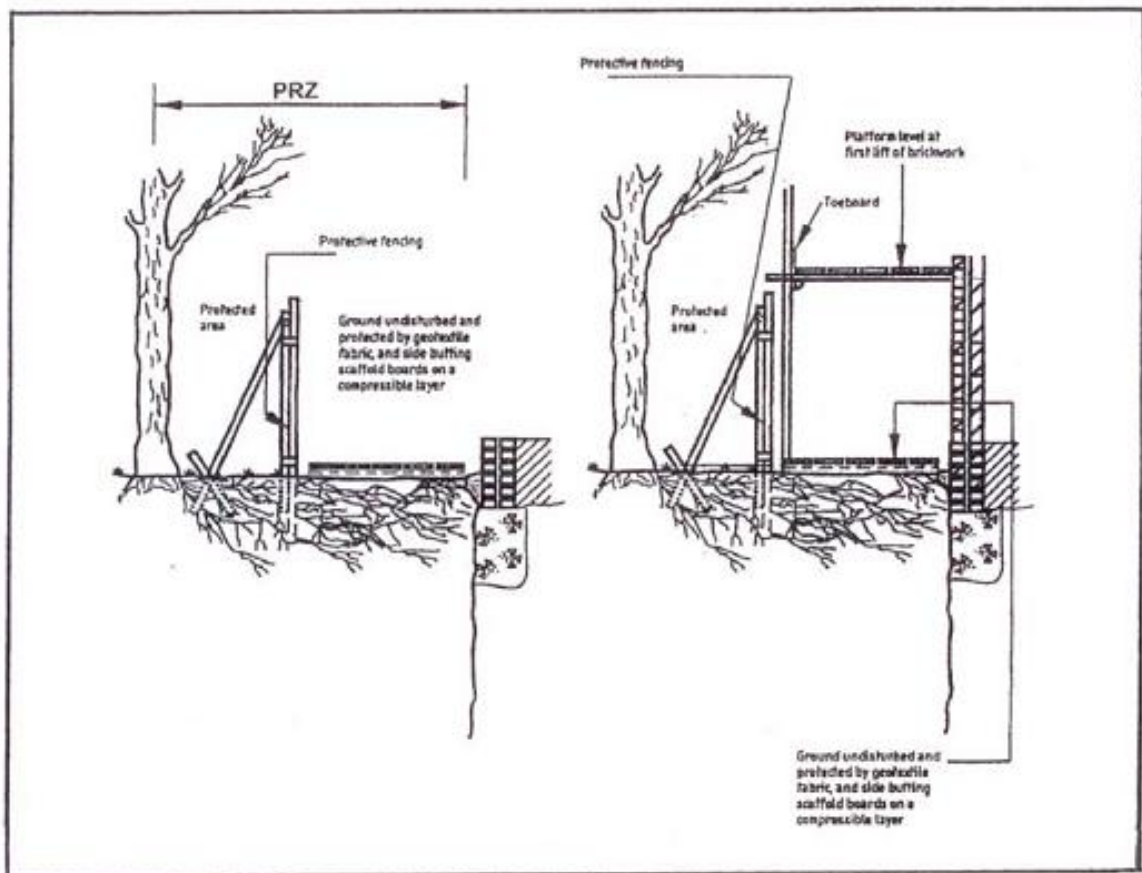
Particular care is to be taken in relation to tree 374, a slender Blue Gum, which falls within the 3 metre construction zone to the Eastern side of the East wing building. It has been recognised that as this tree is slender in nature it is possible to erect temporary scaffolding either side of the tree, while minimising any ground support for the scaffolding being within the root zone of tree 374. The builder will adhere to this requirement.

A qualified arborist will carry out regular site inspections to ensure adherence to this requirement and the AIS & VMP. The builder is to seek qualified arborist input in relation to the pruning of branches for the purpose of construction related activities. The builder shall also seek

qualified arborist approval of the proposed protection measures to tree root zones within the defined construction zone. Refer to Arboricultural report by Tree Wise Men attachment E: scaffolding within a protected area for treatment of root zones within the construction zone.

**Extract from Arboricultural report by Tree Wise Men attachment E:
scaffolding within a protected area for treatment of root zones**

Adapted from BS5837:2005



Scaffolding within the PRZ

6.5 PROTECTION OF HERITAGE ELEMENTS

All care will be taken to protect retained heritage items on the site. For details of the retained heritage items requiring protecting during construction refer to the Heritage Impact Statement (HIS) and the Heritage Conservation Management Plan (HCMP) prepared by Rod Howard & Associates.

6.6 EXISTING SERVICES AND INGROUND SERVICES

Prior to commencement of works the position and location of all existing services will be ascertained from drawings received from the relevant authorities and/or investigations carried out on site by other appropriate means. Disconnection, capping and alterations of services shall be carried out so as to minimise the effect on any surrounding property.

All care to be taken to avoid critical root zones to trees. Refer to hydraulic services and drainage services reports prepared by LHO Group Pty Ltd and the AIS for further details.

7.0 WASTE MANAGEMENT METHODOLOGY DURING CONSTRUCTION

The purpose of the Waste Management methodology is to ensure that resources are conserved and waste is processed responsibly by minimising waste generation and maximizing recycling of materials.

7.1 MITIGATING MEASURES

Materials Selection & Ordering:

- Selection of all materials will be undertaken by architectural designers.
- Materials requirements are to be accurately calculated to minimize waste from over ordering.
- Materials ordering process is to aim at minimisation of materials packaging.
- Material Safety Data Sheets (MSDS) are to accompany all materials delivered to site, where required, to ensure that safe handling and storage procedures are implemented.

Waste Recycling

- Waste generation from construction activities on site will be minimized, reused or recycled where applicable.
- Waste recycling will be undertaken off-site at the waste traffic station by our rubbish removal contractor.
- Recyclable materials are to be specified wherever practical.
- The building design has incorporated a retention tank capable of holding recycled water from roof water run off. This will supply water to irrigation, WC's.
- Where practical all demolished material is to be considered for recycling. The anticipated target for recycling is 80% of all

demolished materials. Expected methods for recycling are, at least, that:-

- a/ All bricks, blocks and roof tiles are to be cleaned and delivered to recycling yards.
- b/ All timber is to be de-nailed and delivered to recycling yards.
- c/ All steel frames are to be delivered to recycling yards.
- Durable materials requiring low maintenance will be specified so as to reduce the long term requirement for replacement of items and, in turn, waste.
- Dedicated and secure containers will be provided on site by an approved waste handling company for non-recyclable waste,
- Where practical, dedicated and secure recycling containers will be provided on site by an approved waste handling company, manufactures, or specialist recycling organizations for the following materials:
 - Steel
 - Paper/Cardboard
 - Glass
 - Concrete/Brick/General Rubbish
 - Plasterboard
 - Refer to Waste Management Plan prepared by Murlan

8.0 HAZARDOUS MATERIAL REMOVAL

The responsibility for determining the extent and types of hazardous materials shall lie with the contractor. A detailed inspection to be undertaken of all areas, including some roof, ceiling and foundation spaces, riser shafts, and any other hard to access areas. This inspection to be carried out by a certified hazardous materials inspector.

All asbestos-based and other hazardous materials should be removed prior to the demolition works commencing.

Removal of asbestos-based material should be undertaken in accordance with the regulations and requirements of the NSW Government and the WorkSafe Australia Asbestos Code of Practice and Guidance Notes.

Removal of SMF materials should be carried out in accordance with the WorkSafe Code of Practice for the Handling of Synthetic Mineral Fibre Products and be disposed of at an approved waste collection facility.

A detailed inspection of all fluorescent light fittings should be undertaken to determine the extent and condition of PCB capacitors within these fittings. Should PCB containing capacitors be found then

they should be handled in accordance with the PCB Chemical Control Order issued by the NSW Environment Protection Authority.

9.0 STATEMENT OF COMMITMENTS

The proponent will adhere to the following during construction activities:-

- Carry out construction works as per the Construction Management Plan.
- Ensure construction traffic and parking requirements during construction activities as per the traffic and parking assessment report prepared by Traffix.
- Carry out all construction activities in accordance with relevant environmental protection legislation.
- Prepare and implement further detailed construction management in conjunction with their contractor and submit to the Principal Certifying Authority prior to commencing construction works.
- Instigate environmental management and mitigation measures during construction activities as per the CMP.
- Carry out excavation activities as set out on the geotechnical report prepared by Douglas & Partners and the hydrogeology report prepared by DF Dickson & Associates.

10.0 RELEVANT DOCUMENTS

This Construction Management Plan must be read in conjunction with the following documents included in the EA:-

- CM.DA.001-Construction Management Plan.
- Species Impact Statement (SIS) by Cumberland Ecology.
- Arboricultural Impact Statement (AIA) by Tree Wise Men.
- Vegetation Management Plan (VMP) prepared by UBM Ecological Consultants Pty Ltd
- Heritage Impact Statement (HIS) prepared by Rod Howard & Associates.
- Heritage Conservation Management Plan (HCMP) prepared by Rod Howard & Associates.
- Hydraulic and drainage report and plans prepared by LHO Group Pty Ltd.
- Traffic report as prepared by Traffix Pty Ltd.
- Geotechnical Report prepared by Douglas & Partners.
- Hydrogeology report as prepared by DF Dickson & Associates.
- Environmental report prepared by Thornton Consulting.
- Acoustic Report prepared by Vipac Engineers.
- Waste Management Plan prepared by Murlan.
- DECC letter dated 10 January 2008.

